

10/650,571
200300745-1

2

RECEIVED
CENTRAL FAX CENTER

JUL 05 2007

LISTING OF CLAIMS

1. (Withdrawn) A method for solid free-form fabrication of a three-dimensional object, comprising: a) depositing a particulate composition including inorganic phosphate particulates in a defined region; b) ink-jetting an aqueous liquid onto a predetermined area of the particulate composition to form hydrated cement in the predetermined area; c) hardening the hydrated cement; and d) repeating steps a) through c) such that multiple layers of the cement are formed that are bound to one another, thereby forming the three dimensional object.
2. (Withdrawn) A method as in claim 1, further comprising the step of removing a portion of the particulate blend that does not form the hydrated cement.
3. (Withdrawn) A method as in claim 1, wherein the particulate composition includes polymeric particulates.
4. (Withdrawn) A method as in claim 3, wherein the polymeric particulates are selected from the group consisting of 75% to 100% hydrolyzed polyvinyl alcohol powder, polyacrylamide powder, poly(acrylic acid), poly(acrylamide-co-acrylic acid), poly(vinyl alcohol-co-ethylene), poly(vinyl alcohol-co-vinyl acetate-co-itaconic acid), poly(vinyl pyrrolidone), poly(methylmethacrylate-co-methacrylic acid), soluble starch, methylcellulose, and combinations thereof.
5. (Withdrawn) A method as in claim 1, wherein the aqueous liquid includes a low molecular weight polymer solvated or dispersed therein.
6. (Withdrawn) A method as in claim 5, wherein the low molecular weight polymer has a weight average molecular weight from 200 Mw to 2000 Mw.
7. (Withdrawn) A method as in claim 1, wherein the aqueous liquid further includes a colorant.

10/650,571
200300745-1

3

8. (Withdrawn) A method as in claim 1, wherein the inorganic phosphate particulates have an average particulate size from 10 microns to 80 microns, and wherein the polymeric particulates have an average particulate size from 1 micron to 80 microns.

9. (Withdrawn) A system for solid free-form fabrication of three-dimensional objects, comprising: a particulate composition including inorganic phosphate particulates; a substrate configured for supporting at least a layer of the particulate composition in a defined region; and an ink-jettable aqueous liquid configured for being jetted in the defined region to hydrate at least a portion of the particulate composition to form a cement.

10. (Withdrawn) A system as in claim 9, further comprising ink-jet architecture configured for ink-jetting the aqueous liquid onto the particulate blend.

11. (Withdrawn) A system as in claim 9, configured for applying multiple layers of cement such that each layer is bound to at least one adjacent layer.

12. (Withdrawn) A system as in claim 9, wherein the particulate composition further includes polymeric particulates.

13. (Withdrawn) A system as in claim 12, wherein the particulate polymeric content is selected from the group consisting of 75% to 100% hydrolyzed polyvinyl alcohol powder, polyacrylamide powder, poly(acrylic acid), poly(acrylamide-co-acrylic acid), poly(vinyl alcohol-co-ethylene), poly(vinyl alcohol-co-vinyl acetate-co-itaconic acid), poly(vinyl pyrrolidone), poly(methylmethacrylate-co-methacrylic acid), soluble starch, methylcellulose, and combinations thereof.

14. (Withdrawn) A system as in claim 9, wherein the aqueous liquid further includes a low molecular weight polymer solvated or dispersed therein.

15. (Withdrawn) A system as in claim 14, wherein the low molecular weight polymer has a weight average molecular weight from 200 Mw to 2000 Mw.

10/650,571
200300745-1

4.

16. (Withdrawn) A system as in claim 9, wherein the aqueous liquid further includes a colorant.

17. (Withdrawn) A system as in claim 9, wherein the aqueous liquid further includes a shrinkage minimizing agent.

18. (Withdrawn) A system as in claim 9, wherein the aqueous liquid or the particulate composition includes a base.

19. (Withdrawn) A system as in claim 9, wherein the aqueous liquid or the particulate composition includes an acid.

20. (Previously Presented) A solid three-dimensional composition, comprising multiple layers of cement deposited in contact with one another, each of said multiple layers of cement comprising a particulate composition including inorganic phosphate particulates, said particulate composition being hydrated and hardened by use of an ink-jettable aqueous liquid; wherein the composition has surface pores, said surface pores being no larger than about 10 microns on average.

21. (Original) A composition as in claim 20, wherein the particulate composition further includes polymeric particulates selected from the group consisting of 75% to 100% hydrolyzed polyvinyl alcohol powder, polyacrylamide powder, poly(acrylic acid), poly(acrylamide-co-acrylic acid), poly(vinyl alcohol-co-ethylene), poly(vinyl alcohol-co-vinyl acetate-co-itaconic acid), poly(vinyl pyrrolidone), poly(methylmethacrylate-co-methacrylic acid), soluble starch, methylcellulose, and combinations thereof.

22. (Original) A composition as in claim 20, wherein the aqueous liquid includes a low molecular weight polymer solvated or dispersed therein.

23. (Original) A composition as in claim 20, wherein the hydrated particulate composition includes hydroxyapatite.

10/650,571
200300745-1

5

24. (Canceled).

25. (Original) A composition as in claim 20, wherein upon drying, the composition substantially retains its size and form.